National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB ID: DEN03FA028	Aircraft Registration Number: N7989C
Occurrence Date: 12/29/2002	Most Critical Injury: Fatal
Occurrence Type: Accident	Investigated By: NTSB

Location/Time

Nearest City/Place	State	Zip Code	Local Time	Time Zone	
Steamboat Spgs	CO	80477	1250	MST	

Airport Proximity: Off Airport/Airstrip	Distance From Landing Facility:	Direction From Airport:

Aircraft Information Summary

Aircraft Manufacturer	Model/Series	Type of Aircraft
Piper	PA-32-300	Airplane

Sightseeing Flight: No Air Medical Transport Flight: No

Narrative

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

HISTORY OF FLIGHT

On December 29, 2002, at approximately 1300 mountain standard time, a Piper PA-32-300, N7989C, was destroyed when it impacted terrain while maneuvering near Steamboat Springs, Colorado. The commercial pilot and one passenger were seriously injured, another passenger received minor injuries; however, one passenger was fatally injured. The airplane was being operated under Title 14 CFR Part 91. Visual meteorological conditions prevailed for the personal, cross-country flight that originated from Bob Adams Field (SBS) Steamboat Springs, Colorado, approximately 20 minutes before the accident. No flight plan had been filed, but the pilot said he was en route to Canon City, Colorado.

The pilot said he had flown his three passengers and three dogs from Canon City, to Steamboat Springs, for Christmas celebrations. He said that on Thursday, December 26, he departed Steamboat Springs, on a solo flight back to Canon City, to fly parachutists up for jumps. He said that he flew the same departure path up Harrison Creek to cross Rabbit Ears Pass (elevation 10,007 feet). This flight was uneventful. On Saturday, he returned to Steamboat Springs to fly his passengers and dogs back to Canon City on the following day.

The pilot said he departed Steamboat Springs, at approximately 1230, on runway 32. He said that he headed south towards Rabbit Ears Pass, and was climbing to approximately 10,700 feet. He said that while flying up Harrison Creek, he encountered a "wind sheer or downdrafts," and the airplane would not clear the mountainous terrain. The pilot said he "decided to put the aircraft down in terrain with trees."

At 1304, a "9-1-1" call was made to the Routt County Sheriffs dispatch office by one of the passengers, reporting that the airplane had gone down. Search and rescue efforts were initiated, and the airplane was located at 1612 by two helicopters. Rescue workers arrived at the scene at 1700, and the pilot and three passengers were transported out by snowmobiles. The three dogs were rescued on the following day, December 30th, 2002.

A pilot at Steamboat Springs airport observed an airplane, matching the description of the accident airplane, depart at approximately 1245. He stated it looked "slow with a low angle of attack. It appeared to be laboring, and turned west and downwind with very shallow turns." He said "It just didn't look right. It appeared to be having difficulty climbing." Another witness, located in the valley approximately 2 miles west of the Harrison Creek mouth, said she heard a "loud airplane, which sounded like an 18 wheel truck using its Jake brake" flying low towards Harrison Creek. She said that it was between 1230 and 1300.

The fatally injured passenger had been trapped under debris of the airplane until the rescue team could cut her out. She died shortly after reaching the hospital in Steamboat Springs.

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PERSONNEL INFORMATION

The pilot holds a commercial pilot certificate with airplane single and multiengine land, and instrument ratings. He also holds a basic ground instructor certificate, a mechanic's certificate with airframe and power plant ratings, and a senior parachute rigger's (back pack) certificate. He had accumulated 3,500 total hours of flight experience; 600 hours in make and model. The pilot also stated he had 6 hours of flight time in the airplane within the preceding 24 hours.

The pilot received a second-class FAA medical certificate on October 10, 2001. The certificate required that the holder wear lenses for distant vision and possess glasses for near vision.

AIRCRAFT INFORMATION

The airplane (S/N 32-7640051) was a single engine, propeller-driven, fixed landing gear, two seat airplane (normally a 6-place airplane, but 4 seats had been removed to allow parachute operations). It was manufactured by Piper Aircraft Company in 1975. It was powered by a Lycoming IO-540, six cylinder, reciprocating, horizontally opposed, direct drive, air cooled, fuel injected engine, which had a maximum takeoff rating of 300 horsepower at sea level. The last annual inspection was performed on April 10, 2002. At the time of the accident, the aircraft maintenance records and tachometer indicated that the airframe had accumulated approximately 8,597 hours. The airplane's current registration, in the pilot's name, was dated February 25, 1997.

On July 17, 1998, a Supplemental Type Certificate was issued for the "installation of a bolt-on departure bar assembly, handrail assembly and step assembly. This installation was approved for use in parachute jumping operations only." The most recent weight and balance measurement for the airplane was performed on January 19, 1999. "The airplane was in parachute jumper airlift configuration. Alteration was in accord with STC SA00352DE." The parachute jumper configuration involved removing the rear passenger seats and cargo door. In place of these seats was a piece of plywood with holes cutout for the seatbelts (this is where the fatally injured passenger was sitting).

The airplane's manufacturer representative said that the service ceiling of this aircraft was 16,250 feet.

METEOROLOGICAL INFORMATION

At 1255, weather conditions at Hayden, Colorado (elevation 6,602 feet), 280 degrees 23 nautical miles (nm) from the accident site, were as follows: wind 270 degrees at 7 knots; visibility 10 statue miles (or greater); sky condition, clear; temperature 36 degrees Fahrenheit; dew point 18 degrees Fahrenheit; altimeter setting 29.69 inches.

According to search and rescue pilots flying Enstrom 280C piston powered helicopters in the area of the accident, there were "no unusual sinks or down drafts," and no turbulence was reported. A landowner, standing in front of her barn (approximately 6 nm west of the accident site at the mouth of Harrison Creek), said there was a "bit of a breeze directly out of the west." She estimated the wind to be approximately 14 to 18 knots.

The density altitude at the accident site (elevation 9,527 feet) was estimated to be 10,200 feet.

WRECKAGE AND IMPACT INFORMATION

The airplane was found in a heavily forested, steep mountainous valley (elevation 9,527 feet; N40 degrees, 20.08 minutes; W106 degrees, 41.33 minutes). The conifer trees were up to approximately 18 inches in diameter and up to approximately 75 feet in height. An approximate 150 foot long

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debris path (tree branches and aircraft parts) was oriented approximately 140 degrees (the Harrison Creek had a 085-265 degree orientation). The summit of Rabbit Ears Pass was 4 nm from the accident site, on a 010 degrees heading. To the north (340 degrees; 1 nm) of the accident site was Walton Peak, elevation 10,599 feet. The fuselage was found nearly upright (approximately 35 degrees right rotation), with both wings, and most of its horizontal stabilizer and elevator separated.

All of the airplane's major components were accounted for at the accident site. All the flight control surfaces were identified; flight control cable continuity was not possible due to impact damage. The left wing was found inverted in trees, approximately 25 feet above the ground. The wing spar's longitudinal axis was nearly level, and the leading edge was sloping approximately 35 degrees down. At approximately the midsection of the wing, a tree (approximately 12 inches in diameter) was imbedded in the wing. This impact arc extended from the leading edge aft to the main spar area. The main fuel tank was fractured, and the main landing gear was partially separated. The inverted left wing was found on the right side of the airplane's impact energy path.

The right wing was separated from the fuselage and broken into several pieces. The section forward of its main wing spar was separated. The fuel tank was fractured. The empennage displayed substantial impact damage, and only the vertical stabilizer and its rudder remained attached.

The fuselage was minimally deformed, but the occupiable space for the two front seat occupants was reduced considerably. The remaining seats had been removed during the STC conversion, and only sheets of plywood could be seen in the aft section of the fuselage.

Due to the deep snow and seasonal weather, the airplane wreckage was not recovered until June 10th, 2003. The engine and airframe were inspected on August 19th, 2003. Crankshaft, camshaft, and valve train continuity was verified. During the initial inspection, thumb compression was verified on all but number two cylinder. Its valve cover and rocker arms were removed, then thumb compression was obtained. One propeller blade was bent aft with some twisting, and the other blade displayed minimal back bending with significant twisting. Both blades exhibited chordwise striations and green transfer material. The yellow propeller spinner exhibited minimal damage.

No preimpact engine or airframe anomalies, which might have affected the airplane's performance, were identified.

MEDICAL AND PATHOLOGICAL INFORMATION

Toxicology tests were not performed on the pilot due to his immediate medication and hospitalization.

TESTS AND RESEARCH

According to one of the passengers, there were only two seats in the airplane. He and the fatally injured passenger were sitting on a "pad of some kind." The passenger reported he had a seat belt around him. According to Title 14 CFR Part 91.107, (a)(3), "Each person on board a U.S.-registered civil aircraft must occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about him or her during movement on the surface, takeoff, and landing."

A weight and balance calculation for the flight was performed using the airplane's last weight and balance data (January 19, 1999), and the occupants and the cargo weight which was acquired from interviewing the survivors. The airplane was certified for a maximum gross weight of 3,400 pounds, and center of gravity limits of 76 to 96.33 inches aft of datum. The airplane's gross weight (with occupants and cargo) at the time of the accident was estimated to be 3,280 pounds. The center of gravity limits at this weight were 88.30 to 96.33 inches. The calculated center of gravity of the airplane at the time of the accident was 98.66 inches, or 2.33 inches aft of the aft most limit. According to Title 14 CFR Part 91.9, (a) .....no person may operate a civil aircraft without

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complying with the operating limitations specified in the approved Airplane or Rotorcraft Flight Manual, markings, and placards....."

A 3-D topographical study of Harrison Creek, by the Investigator-In-Charge, revealed a perpendicular ridge, orientated approximately 175 degrees jutting into Harrison Creek. The valley makes a semicircular diversion to the south, right at the impact area. The airplane was found on this southerly protruding ridge.

The Investigator-In-Charge determined that the 14 to 18 knot wind that was reported by the witness at the mouth of Harrison Creek, would have been blowing right up the creek. This would have made any airplane's ground speed just that much faster, and their rate of climb per mile would be correspondingly less.

ADDITIONAL DATA

The airplane, including all components and logbooks, was released to a representative of the owner's insurance company on January 18, 2003.

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Landing Facility/Approach Information

Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used	Runway Length	Runway Width

Runway Surface Type: Unknown

Runway Surface Condition: Unknown

Type Instrument Approach: Unknown

VFR Approach/Landing: Unknown

Aircraft Information

Aircraft Manufacturer	Model/Series	Serial Number
Piper	PA-32-300	32-7640051

Airworthiness Certificate(s): Normal

Landing Gear Type: Tricycle

Homebuilt Aircraft?	Number of Seats:	Certified Max Gross Wt.	Number of Engines:
No	2	3600 LBS	1

Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:
Reciprocating	Lycoming	TIO-540	300 HP

- Aircraft Inspection Information

Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time
Annual	04/2002	Hours	8348.8 Hours

- Emergency Locator Transmitter (ELT) Information

ELT Installed?	ELT Operated?	ELT Aided in Locating Accident Site?
Yes	Yes	Yes

Owner/Operator Information

Registered Aircraft Owner	Street Address	City	State	Zip Code
Lloyd J. Moreau Jr.	426 S. Hancock Ave., Apt C	Colorado Springs	CO	80903

Operator of Aircraft	Street Address	City	State	Zip Code
Same as Reg'd Aircraft Owner	Same as Reg'd Aircraft Owner			

Operator Does Business As:

Operator Designator Code:

- Type of U.S. Certificate(s) Held: None

Air Carrier Operating Certificate(s):

Operating Certificate:

Operator Certificate:

Regulation Flight Conducted Under: Part 91: General Aviation

Type of Flight Operation Conducted: Personal

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First Pilot Information

Name	City	State	Date of Birth	Age
On File	On File	On File	On File	53

Sex: M | Seat Occupied: Left | Principal Profession: Unknown | Certificate Number: On File

Certificate(s): Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft?

Current Biennial Flight Review? 06/2002

Medical Cert.: Class 2 | Medical Cert. Status: Valid Medical--w/ waivers/lim. | Date of Last Medical Exam: 10/2001

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Mult-Engine	Night	Instrument Actual	Instrument Simulated	Rotorcraft	Glider	Lighter Than Air
Total Time	3500	600	2600	800	600	200	50			
Pilot In Command(PIC)	3500	600	2600	800	600	200	50			
Instructor										
Last 90 Days		30								
Last 30 Days		10								
Last 24 Hours	6	6	6							

Seatbelt Used? Yes | Shoulder Harness Used? No | Toxicology Performed? No | Second Pilot? No

Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point	State	Airport Identifier	Departure Time	Time Zone
Same as Accident/Incident Location		SBS	1240	MST

Destination	State	Airport Identifier
Canon City	CO	1V6

Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Briefing: No record of briefing

Method of Briefing: Unknown

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
HDN	1255	MST	6602 Ft. MSL	27 NM	290 Deg. Mag.

Sky/Lowest Cloud Condition: Clear Ft. AGL

Condition of Light: Day

Lowest Ceiling: None Ft. AGL

Visibility: 10 SM

Altimeter: 29.69 "Hg

Temperature: 2 °C

Dew Point: -8 °C

Wind Direction: 270

Density Altitude: 7166 Ft.

Wind Speed: 7

Gusts:

Weather Condtions at Accident Site: Visual Conditions

Visibility (RVR): Ft.

Visibility (RVV) SM

Intensity of Precipitation:

Restrictions to Visibility: None

Type of Precipitation: None

Accident Information

Aircraft Damage: Destroyed

Aircraft Fire: None

Aircraft Explosion None

Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot		1			1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	1	2			3
- TOTAL ABOARD -	1	3			4
Other Ground					
- GRAND TOTAL -	1	3			4

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Administrative Information

Investigator-In-Charge (IIC)

James F. Struhsaker

Additional Persons Participating in This Accident/Incident Investigation:

Tom Forchtner
FAA Denver FSDO
Denver, CO 80249

Mike McClure
Air Safety Investigator
The New Piper Aircraft, Inc.
Prosper, TX 75078

John B Butler
Air Safety Investigator
Lycoming Engines
Arlington, TX 76014